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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,532	03/03/2004	Yi-Lin Lai	82556	3370
20529	7590	11/15/2006		
NATH & ASSOCIATES 112 South West Street Alexandria, VA 22314			EXAMINER BIBBINS, LATANYA	
			ART UNIT 2627	PAPER NUMBER

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
10/791,532	LAI ET AL.	
Examiner	Art Unit	
LaTanya Bibbins	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1A, 1B, and 1C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

3. The abstract of the disclosure is objected to because of its undue length. Applicant is reminded of the proper format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet **within the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1 and 6-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claims 1 and 10 recite the limitation "the signal" in the preamble. There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 6, 8, 11, and 13, the term "usual defect detection level" is a relative term which renders the claim indefinite. The term "usual" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 6, 9, and 14 recite the limitation "said envelope signal." There is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, the examiner will interpret "said envelope signal" as an envelope signal of the RF signal generated by the preamplifier.

Claims 7 and 12 recite the limitation "RF patterns." There is insufficient antecedent basis for this limitation in the claim. It cannot be determined from the claims or the specification what is meant by "RF patterns." In the interest of compact prosecution, the examiner will interpret the "RF patterns" as a series of RF signals. In addition, the term "serious data length" in claims 7 and 12 is a relative term which

renders the claim indefinite. The term "serious" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In the interest of compact prosecution, the examiner will interpret the "serious data length" as a predetermined length. Further claims 7 and 12 recite variables n1, n2, n3, and n4. A definition of the variables n1, n2, n3, and n4 is not provided in either the claim or the specification and therefore one of ordinary skill in the art would not be able to determine the definition of the variables. In the interest of compact prosecution, the examiner will interpret variables n1, n2, n3, and n4 as any integer including zero.

Claims 8 and 13 recite the limitation "a third threshold level." Since a first and second threshold levels are not previously mentioned, there is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, the examiner will interpret the "third threshold level" as a first threshold level. Claims 8 and 13 also recite the limitation "said usual defect detection level." There is insufficient antecedent basis for this limitation in the claim.

Claims 9 and 14 recite the limitation "a fourth threshold level." Since a first, second, and third threshold level is not previously mentioned, there is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, the examiner will interpret the "fourth threshold level" as a first threshold level. In addition, the term "normal envelope signal" in claims 9 and 14 is a relative term which renders the claim indefinite. The term "normal" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one

of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claim 10, the term "abnormal data length" is a relative term which renders the claim indefinite. The term "abnormal" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1, 3-6, 8-11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US Patent Number 6,862,088 B2) and further in view of Tsai et al. (US PGPub Nuber 2002/0172111 A1).**

Regarding claim 1, Song teaches a device for detecting the signal on a defect disc, said device comprising: a servo control unit handling related electromechanical devices of said device (column 3 lines 62-65 and Figure 2 element 32); a preamplifier receiving data from a lens and generating an RF signal for data process, servo control signals for said servo control unit and various signals for defect detection; (see the preamplifier and conditioning circuit of Figure 1 element 26 and column 2 lines 42-47); a

slicer receiving and digitalizing said RF signal so as to generate digitalized RF signal (see the analog-to digital converter in Figure 1 element 30 and column 3 lines 24-28); a defect detection unit receiving said various signals for detecting different kinds of defects to set corresponding defect flag signals (Figures 1 and 2 elements 36 and 32 and column 3 lines 41-61 and further in column 4 lines 25-32 where the comparator will set a "defect flag" upon detecting a defect), wherein said defect detection unit includes means for ADefect1 detection, means for EFMDefect detection, means for RPDefect detection, means for Interruption detection, means for ADefect detection, and means for DSPDefect detection (see Figure 2 elements 36 and 32 where the means for defect detection are the comparators and defect controller, further in column 3 lines 44-46 where additional comparators may be added to accommodate additional defect detection); a logic combination unit running a suitable logic operation on said defect flag signals for detecting a particular defect (see the defect controller in Figure 2 element 50 and discussion in column 5 lines 5-16). Song, however, fails to teach a phase lock loop and a decoder.

Tsai, on the other hand, teaches a phase lock loop (PLL) synchronizing said digitalized RF signal to a system clock and counting the length of said digitalized RF signal (Figure 1 element 16 and paragraphs [0018] and [0023]); and a decoder decoding the length of said digitalized RF signal to a host (Figure 1 element 110 and paragraph [0019]);

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the PLL and decoder of Tsai into the optical

disk drive apparatus of Song. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to produce a device that protects synchronizing patterns when defects occur on discs (see Tsai paragraph [0002]).

Regarding claim 3, Song and Tsai teach the device according to claim 1, wherein said servo control signals further includes a focusing error (FE) signal and a tracking error (TE) signal (see Song Figure 1 elements 28a, 28b).

Regarding claim 4, Song and Tsai teach the device according to claim 1 wherein said various signals at least include an envelope signal of said RF signal (see the preamplifier and conditioning circuit in Figure 1 element 26 and column 2 lines 44-46).

Regarding claim 5, Song and Tsai teach the device according to claim 1, wherein said defect detection unit further receives eight to fourteen modulation (EFM) signals from said slicer and said PLL (see Tsai paragraphs [0017] and [0018]).

Regarding claim 6, Song and Tsai teach the device according to claim 1, wherein said means for ADefect1 detection compares said envelope signal with a first threshold level, which is higher than an usual defect detection level, and sets a first corresponding flag signal when said envelope signal is lower than said first threshold level (see Song column 3 lines 47-61 where the comparator compares the signal to a reference level and generates an output signal).

Regarding claim 8, Song and Tsai teach the device according to claim 1, wherein said means for RPDefect detection compares an RFRP signal with a third

threshold level, which is higher than said usual defect detection level, and sets a third corresponding flag signal when said RFRP signal is lower than said third threshold level (see Song column 3 lines 47-61 where the comparator compares the signal to a reference level and generates an output signal).

Regarding claim 9, Song and Tsai teach the device according to claim 1, wherein said means for Interruption detection compares said envelope signal with a fourth threshold level, which is higher than an normal envelope signal, and sets a fourth corresponding flag signal when said envelope signal is higher than said fourth threshold level (see Song column 3 lines 47-61 where the comparator compares the signal to a reference level and generates an output signal).

Claims 10, 11, 13, and 14 are drawn to the method of using the corresponding apparatus claimed in claims 1, 6, 8, and 9. Therefore method claims 10, 11, 13, and 14 corresponding to apparatus claims 1, 6, 8, and 9 are rejected for the same reasons of obviousness as used above.

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US Patent Number 6,862,088 B2) and Tsai et al. (US PGPub Nuber 2002/0172111 A1) as applied to claim 1 above, and further in view of Kim (US PGPub 2006/0250913 A1).

Regarding claim 2, Song and Tsai teach the device according to claim 1, wherein said related electromechanical devices include a spindle motor (Tsai Figure 1 element 12), and means for a lens slightly tracking and focusing move (see Song Figure

1 elements 28a, 28b, and 32 and the means for tracking and focusing is provided by the controller). Song and Tsai fail to teach a sled motor. Kim, however, teaches a sled motor (see Figure 1 element 9).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the sled motor taught by Kim into the optical disk device of Song and Tsai. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to provide a mechanism for moving the optical pick-up.

9. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US Patent Number 6,862,088 B2) and Tsai et al. (US PGPub Nuber 2002/0172111 A1) and further in view of Lai et al. (US PGPub Number 2003/001350 A1).

Regarding claim 7, Song and Tsai teach the device according to claim 1, but lacks the features of claim 7. However, Lai discloses a device for detecting the signal on a defect disc wherein said means for EFMDetect detection further includes: comparing a data frame of said RF signal with a first predetermined data length, and setting a second corresponding flag signal when more than n1 RF patterns are shorter than said first predetermined data length (see Figure 2 element 208 where if the length of at least 1 waveform is shorter than 3T the frequency of the PLL is maintained); comparing said data frame of said RF signal with a second predetermined data length, and setting said second corresponding flag signal when more than n2 RF patterns are

longer than said second predetermined data length (see Figure 2 element 208 where if the length of at least 1 waveform is longer than $11T$ the frequency of the PLL is maintained); comparing said data frame of said RF signal with an serious data length, and setting said second corresponding flag signal when more than $n3$ RF patterns are longer than said serious data length (see Figure 2 element 208 where if the length of at least 1 waveform is longer than $11T$ the frequency of the PLL is maintained); and resetting said second corresponding flag signal after more than $n4$ RF patterns are between said first and said second predetermined data lengths. (see Figure 2 element 212 and 216 where the frequency of the PLL is decreased or increased, i.e. reset, after reaching a preset threshold)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the EFM defect detection described by Lai into the optical disc device taught by Song and Tsai. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to prevent the optical system from malfunctions caused by adjustment operations when error data is read (Lai paragraph [0003])

Claims 12 is drawn to the method of using the corresponding apparatus claimed in claim 7. Therefore method claim 12 corresponding to apparatus claim 7 is rejected for the same reasons of obviousness as used above.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LaTanya Bibbins
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